

REMARKS

Status of the Application

Claims 23-61 are all the claims pending in the Application, as claims 46-61 are hereby added. Only claims 34-45 have been rejected. Applicant thanks the Examiner for indicating that claims 23-33 are allowed.

Anticipation Rejection

The Examiner has rejected claims 34-37, 44, and 45 under 35 U.S.C. § 102(b) as being anticipated *Rai et al.* (US 4,818,728, hereinafter "*Rai*"). This rejection is respectfully traversed.

Rai is directed to a method of making a hybrid semiconductor device where first substrate 1 is placed above second substrate 1' such that the metal studs 4 on the first semiconductor substrate 1 penetrate into solder deposits 5 on the second semiconductor substrate 1' (*See, Col. 4, lines 26-30*).

The Examiner takes the position that electrodes 2 and 2' somehow correspond to the first and second planar conductors recited in independent claim 34.

However, Applicant respectfully submits that *Rai* fails to teach or suggest "bonding said second die to said first die such that an outermost planar surface of the first planar conductor is aligned and in planar contact with an outermost planar surface of the second planar conductor," as recited in independent claim 34.

Specifically, even if electrodes 2 and 2' of *Rai* could be considered equivalent to the recited first and second planar conductors, it is clear that no outermost planar surfaces of these elements ever contact. Rather, it is clear that stud 4 and solder deposit 5 are arranged between

the surfaces of electrodes 2 and 2', and that neither stud 4 nor solder deposit 5 can reasonably be considered planar conductors.

Thus, Applicant respectfully submits that independent claim 34 is patentable over the applied reference. Further, Applicant respectfully submits that rejected dependent claims 35-37, 44 and 45 are allowable, *at least* by virtue of their dependency.

Thus, Applicant respectfully requests that the Examiner withdraw this rejection.

Obviousness Rejection

The Examiner has rejected under 35 U.S.C. § 103(a): (1) claims 38-40, 42, and 43 as being unpatentable over *Rai* in view of *Tukamoto et al.* (US 5,376,825; hereinafter “*Tukamoto*”); and (2) claim 41 as being unpatentable over *Rai* in view of *Tukamoto*, and further in view of *Kazior et al., DBIT - Direct Backside Interconnect Technology: A Manufacturable, Bond Wire Free Interconnect Technology for Microwave and Millimeter Wave MMICs* (hereinafter “*Kazior*”). These rejections are respectfully traversed.

Applicant respectfully submits that dependent claims 38-40, 42 and 43 are allowable, at least by virtue of their dependency from independent claim 34. Additionally, Applicant respectfully submits that the secondarily applied references, *Tukamoto* and *Kazior*, both fail to teach or suggest at least the features discussed above as missing from *Rai* vis-à-vis claim 1.

Thus, Applicant respectfully requests that the Examiner withdraw this rejection.

New Claims

Claims 46-61 are hereby added. Claims 46-61 are fully supported *at least* by the Figures, and the related description, of the instant Application.


Conclusion

In view of the foregoing, it is respectfully submitted that claims 23-61 are allowable. Thus, it is respectfully submitted that the application now is in condition for allowance with all of the claims 23-61.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Please charge any fees which may be required to maintain the pendency of this application, except for the Issue Fee, to our Deposit Account No. 19-4880.

Respectfully submitted,



Timothy P. Cremen
Registration No. 50,855

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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